Amendments to the claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A polynucleotide ~~which~~that comprises a sequence encoding an HIV envelope protein~~ or HIV envelope protein fragment containing at least one HIV epitope, or immunogenic derivative thereof~~, which is substantially non-glycosylated when expressed in a mammalian target cell, operably linked to a heterologous promoter, wherein the HIV envelope protein ~~or fragment, or immunogenic derivative encoding sequence~~ is adapted to reduce or prevent glycosylation in a mammalian target cell.

2. (Currently Amended) The polynucleotide according to claim 1 wherein the HIV envelope protein ~~or fragment or immunogenic derivative thereof~~ is gp120~~ or a fragment or immunogenic derivative thereof~~.

3. (Currently Amended) The polynucleotide according to claim 1 ~~or claim 2~~ wherein the HIV envelope protein lacks a functional secretion signal.

4. (Currently Amended) The polynucleotide according to claim 2 ~~or claim 3~~ wherein the gp120 encoding sequence is expressed as a fusion protein comprising at least one other HIV protein~~ or fragment or immunogenic derivative thereof~~.

5. (Currently Amended) The polynucleotide according to claim 4 wherein the ~~at least one~~ other HIV protein~~ or fragment or immunogenic derivative~~ is selected from the group of: Nef, Gag, RT [[or]]and Tat.

6. (Currently Amended) The polynucleotide according to claim [[5]]4 wherein the gp120 encoding sequence is linked to a sequence encoding HIV RT ~~or a fragment or immunogenic derivative thereof~~ and a sequence encoding HIV Gag ~~or a fragment or immunogenic derivative thereof~~ and a sequence encoding HIV Nef ~~or a fragment or~~

~~immunogenic derivative thereof~~ to encode a gp120, RT, Gag and Nef-containing fusion protein.

7. (Currently Amended) The polynucleotide according to claim 6 wherein the fusion protein is selected from: gp120-RT-Nef-Gag and RT-Nef-Gag-gp120.

8. (Currently Amended) The polynucleotide according to claim [[5]]4 wherein the gp120 sequence is linked to a sequence encoding HIV Tat ~~or a fragment or immunogenic derivative thereof~~ and a sequence encoding HIV Nef ~~or a fragment or immunogenic derivative thereof~~ to encode a gp120, Nef and Tat-containing fusion protein.

9. (Currently Amended) The polynucleotide according to claim 8 wherein the fusion protein is a gp120-Nef-Tat fusion.

10. (Currently Amended) The polynucleotide according to claim 8 wherein the gp120 encoding sequence is further linked to a sequence encoding HIV Gag ~~or a fragment or immunogenic derivative thereof~~ to encode a gp120, Nef, Tat and Gag-containing fusion protein.

11. (Currently Amended) The polynucleotide according to claim 10 wherein the fusion protein is a gp120-Gag-Nef-Tat fusion.

12. (Currently Amended) The polynucleotide according to ~~any one of claims 5, 6, 7, 10 or 11~~ claim 5 wherein the Gag comprises one or both of P17 ~~and/or 24~~and P24.

13. (Currently Amended) The polynucleotide according to ~~any one of claims 1 to 12~~ claim 5 wherein at least one ~~or more~~ of the sequences encoding gp120, Nef, Gag, RT [[or]]and Tat ~~or fragment or immunogenic derivative thereof~~ is ~~or are~~ codon optimised to resemble ~~the~~ codon usage in a highly expressed human gene.

14. (Currently Amended) A polynucleotide sequence selected from the group of:
~~1. gp120 codon optimised, minus secretion signal~~

~~2. gp120 codon optimised, minus secretion signal – tr Nef~~

~~3. gp120 codon optimised, minus secretion signal – tr Nef – mTat~~

~~4. gp120 codon optimised, minus secretion signal – Nef - mTat~~

~~5. gp120 codon optimised, minus secretion signal – p17/24 Gag – tr Nef~~

~~6. gp120 codon optimised, minus secretion signal – p17/24 Gag – tr Nef - mTat~~

~~7. gp120 codon optimised, minus secretion signal - p17/24 Gag - Nef-mTat~~

~~8. gp120 codon optimised, minus secretion signal - p17/24 Gag - mNef-mTat~~

~~9. gp120 codon optimised, minus secretion signal - p17/24 Gag - L1Nef-mTat~~

~~10. gp120 codon optimised, minus secretion signal - p17/24 Gag - L2Nef-mTat~~

~~11. gp120 codon optimised, minus secretion signal - p17/24 Gag - LLNef-mTat~~

~~12. gp120 codon optimised, minus secretion signal - p17/24 Gag - mLLNef-mTat~~

~~13. gp120 codon optimised, minus secretion signal - p17/24 Gag - mL1Nef-mTat~~

~~14. gp120 codon optimised, minus secretion signal - p17/24 Gag - mL2Nef-mTat~~

~~15. gp120 codon optimised, minus secretion signal - mRT- trNef - p17/24 Gag~~

~~16. mRT – trNef – p17/24 Gag – gp120 codon optimised, minus secretion signal~~

~~Wherein the RT and Gag are codon optimised.~~

gp120 codon optimised, minus secretion signal,

gp120 codon optimised, minus secretion signal – tr Nef,

gp120 codon optimised, minus secretion signal – tr Nef – mTat,

gp120 codon optimised, minus secretion signal – Nef - mTat,

gp120 codon optimised, minus secretion signal – p17/24 Gag – tr Nef,

gp120 codon optimised, minus secretion signal – p17/24 Gag – tr Nef - mTat,

gp120 codon optimised, minus secretion signal - p17/24 Gag - Nef-mTat,

gp120 codon optimised, minus secretion signal - p17/24 Gag - mNef-mTat,

gp120 codon optimised, minus secretion signal - p17/24 Gag - L1Nef-mTat,

gp120 codon optimised, minus secretion signal - p17/24 Gag - L2Nef-mTat,

gp120 codon optimised, minus secretion signal - p17/24 Gag - LLNef-mTat,

gp120 codon optimised, minus secretion signal - p17/24 Gag - mLLNef-mTat,

gp120 codon optimised, minus secretion signal - p17/24 Gag - mL1Nef-mTat,

gp120 codon optimised, minus secretion signal - p17/24 Gag - mL2Nef-mTat,

gp120 codon optimised, minus secretion signal - mRT- trNef - p17/24 Gag,

and

mRT – trNef – p17/24 Gag – gp120 codon optimised, minus secretion signal,

Wherein the RT and Gag are codon optimised.

15. (Currently Amended) The polynucleotide according to ~~any one of claims 1 to 14~~ claim 1 wherein the promoter is ~~the promoter~~ from HCMV IE gene.

16. (Currently Amended) The polynucleotide according to claim 15, wherein [[the]]a 5' untranslated region between the promoter and the coding ~~polynucleotide~~sequence comprises exon 1.

17. (Currently Amended) A set of polynucleotides comprising a polynucleotide according to ~~any of claims 1 to 16~~ claim 1 and at least one further polynucleotide encoding at least one chosen from the group of: HIV Nef, Gag, RT [[or]]and Tat ~~or fragment or immunogenic derivative thereof~~.

18. (Currently Amended) The set of polynucleotides according to claim 17, wherein the polynucleotides are contained on a single vector under the control of ~~two or more~~at least one separate ~~promoters~~promoter.

19. (Currently Amended) The set of polynucleotides according to claim 17[[or 18]], encoding a gp120 ~~or fragment or immunogenic derivative~~ and a fusion of RT-Nef-Gag ~~or of fragments or immunogenic derivatives thereof~~.

20. (Currently Amended) A set of polynucleotides according to claim 17 ~~or claim 18~~ selected from ~~the following~~:

~~1. gp120 codon optimised, minus secretion signal + tr Nef-mTat~~

~~2. gp120 codon optimised, minus secretion signal + P17/24 Gag - tr Nef~~

~~3. gp120 codon optimised, minus secretion signal + P17/24 Gag - Nef - mTat~~

~~4. mRT - tr Nef - P17/24 Gag + gp120 codon optimised, minus secretion signal~~

~~5. gp120 codon optimised, minus secretion signal + mRT - tr Nef - P17/24 Gag~~

~~wherein RT and Gag are codon optimised.~~

gp120 codon optimised, minus secretion signal + tr Nef-mTat

gp120 codon optimised, minus secretion signal + P17/24 Gag - tr Nef

gp120 codon optimised, minus secretion signal + P17/24 Gag - Nef - mTat mRT – tr Nef – P17/24 Gag + gp120 codon optimised, minus secretion signal gp120 codon optimised, minus secretion signal + mRT – tr Nef – P17/24 Gag wherein RT and Gag are codon optimised.

21. (Currently Amended) A vector comprising a polynucleotide ~~or polynucleotides~~ as claimed in ~~any one of claims 1 to 20~~ claim 1.

22. (Currently Amended) The vector according to claim 21, wherein the vector ~~which~~ is a double stranded DNA plasmid.

23. (Currently Amended) The vector according to claim 21, wherein the vector ~~which~~ is a replication defective adenovirus vector.

24. (Currently Amended) The vector according to claim 23, wherein the vector ~~which~~ is derived from the group of: Pan 9, 5, 6 [[or]]and 7.

25. (Currently Amended) A fusion protein comprising a substantially non-glycosylated HIV envelope protein ~~or a fragment or immunogenic derivative thereof~~ and at least one additional HIV protein ~~or fragment or immunogenic derivative thereof~~, said additional HIV protein selected from Nef, Gag, RT and Tat.

26. (Currently Amended) A composition comprising a substantially non-glycosylated HIV envelope protein ~~or a fragment or immunogenic derivative thereof~~ and at least one additional HIV protein, ~~or fragment or immunogenic derivative thereof, preferably in the form of a fusion protein,~~ said at least one additional HIV protein selected from Nef, Gag, RT and Tat.

27. (Currently Amended) A polypeptide encoded by the polynucleotide ~~or vector~~ according to ~~any of claims 1 to 24~~ claim 1.

28. (Currently Amended) A pharmaceutical composition comprising a ~~nucleotide sequence or a set of nucleotide sequences~~ a vector according to ~~any one of claims 1 to~~

~~20, a vector of~~ claim 21 ~~to 24~~, ~~a fusion proten according to claim 25 or a composition according to claim 26 or a polypeptide according to claim 27,~~ and [[a]]at least one element chosen from the group of: a pharmaceutically acceptable excipient, diluent, carrier, [[or]]and an adjuvant.

29. (Currently Amended) The pharmaceutical composition according to claim 28, wherein the carrier is a plurality of particles ~~such as gold beads~~.

30. (Currently Amended) The pharmaceutical composition according to claim 28[[or 29]] suitable for delivery in a prime boost format.

31. (Currently Amended) An intradermal delivery device comprising a pharmaceutical composition according to ~~any one of claims 28 to 30~~claim 28.

32. (Currently Amended) A method of treating a patient suffering from or susceptible to a disease comprising administering a safe and effective amount of a pharmaceutical composition according to ~~any one of claims 28 to 30~~ claim 28.

33-34. (Cancelled)

35. (Currently Amended) A process for the production of a polynucleotide according to ~~any one of claim 1 to 20~~ claim 1 comprising linking a nucleotide sequence encoding a substantially non-glycosylated HIV envelope ~~molecule~~protein ~~or fragment or immunogenic derivative thereof~~ and ~~optionally~~ a sequence encoding an HIV regulatory protein ~~or fragment or immunogenic derivative thereof~~, to a heterologous promoter sequence.

36. (New) The pharmaceutical composition according to claim 28, wherein the carrier is gold beads.